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User Manual

ULTRAGAIN PRO-8 DIGITAL ADA8000

Audiophile 8-Channel A/D & D/A Converter with Premium Mic Preamplifiers and ADAT Interface

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Thank you

Congratulations! With the ADA8000, you have acquired a high-end device that perfectly supports you when it comes to creative signal routing. Thanks to its professional features, the ADA8000 ensures outstanding performance, be it in the professional or home recording studio. Last but not least, you will surely appreciate the ADA8000's versatility on stage.

EN Important Safety Instructions

Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock. Use only high-quality commercially-available speaker cables with ¼" TS plugs pre-installed. All other installation or modification should be performed only by qualified personnel.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

Caution

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.

Caution

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Caution

These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this apparatus near water.

6. Clean only with dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Use only attachments/accessories specified by the manufacturer.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.

16. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

Legal Disclaimer

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Trident Chambers, Wickhams Cay, P.O. Box 146,
Road Town, Tortola, British Virgin Islands

Limited Warranty

§ 1 Warranty

1 This limited warranty is valid only if you purchased the product from a BEHRINGER authorized dealer in the country of purchase. A list of authorized dealers can be found on BEHRINGER's website behringer.com under "Where to Buy", or you can contact the BEHRINGER office closest to you.

2 MUSIC Group* warrants the mechanical and electronic components of this product to be free of defects in material and workmanship if used under normal operating conditions for a period of one (1) year from the original date of purchase (see the Limited Warranty terms in § 4 below), unless a longer minimum warranty period is mandated by applicable local laws. If the product shows any defects within the specified warranty period and that defect is not excluded under § 4, MUSIC Group shall, at its discretion, either replace or repair the product using suitable new or reconditioned product or parts. In case MUSIC Group decides to replace the entire product, this limited warranty shall apply to the replacement product for the remaining initial warranty period, i.e., one (1) year (or otherwise applicable minimum warranty period) from the date of purchase of the original product.

3 Upon validation of the warranty claim, the repaired or replacement product will be returned to the user freight prepaid by MUSIC Group.

4 Warranty claims other than those indicated above are expressly excluded.

PLEASE RETAIN YOUR SALES RECEIPT. IT IS YOUR PROOF OF PURCHASE COVERING YOUR LIMITED WARRANTY. THIS LIMITED WARRANTY IS VOID WITHOUT SUCH PROOF OF PURCHASE.

§ 2 Online registration

Please do remember to register your new BEHRINGER equipment right after your purchase at behringer.com under "Support" and kindly read the terms and conditions of our limited warranty carefully. Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently. Thank you for your cooperation!

§ 3 Return materials authorization

1 To obtain warranty service, please contact the retailer from whom the equipment was purchased. Should your BEHRINGER dealer not be located in your vicinity, you may contact the BEHRINGER distributor for your country listed under "Support" at behringer.com. If your country is not listed, please check if your problem can be dealt with by our "Online Support" which may also be found under "Support" at behringer.com. Alternatively, please submit an online warranty claim at behringer.com BEFORE returning the product. All inquiries must be accompanied by a description of the problem and the serial number of the product. After verifying the product's warranty eligibility with the original sales receipt, MUSIC Group will then issue a Return Materials Authorization ("RMA") number.

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2 Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by MUSIC Group.

3 Shipments without freight prepaid will not be accepted.

§ 4 Warranty Exclusions

1 This limited warranty does not cover consumable parts including, but not limited to, fuses and batteries. Where applicable, MUSIC Group warrants the valves or meters contained in the product to be free from defects in material and workmanship for a period of ninety (90) days from date of purchase.

2 This limited warranty does not cover the product if it has been electronically or mechanically modified in any way. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. This limited warranty does not cover any such modification/adaptation, regardless of whether it was carried out properly or not. Under the terms of this limited warranty, MUSIC Group shall not be held responsible for any cost resulting from such a modification/adaptation.

3 This limited warranty covers only the product hardware. It does not cover technical assistance for hardware or software usage and it does not cover any software products whether or not contained in the product. Any such software is provided "AS IS" unless expressly provided for in any enclosed software limited warranty.

4 This limited warranty is invalid if the factory-applied serial number has been altered or removed from the product.

5 Free inspections and maintenance/repair work are expressly excluded from this limited warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, guitar strings, illuminants and similar parts.

6 Damage/defects caused by the following conditions are not covered by this limited warranty:

- improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals;
- connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used;
- damage/defects caused by acts of God/Nature (accident, fire, flood, etc) or any other condition that is beyond the control of MUSIC Group.

7 Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the limited warranty.

8 If an inspection of the product by MUSIC Group shows that the defect in question is not covered by the limited warranty, the inspection costs are payable by the customer.

9 Products which do not meet the terms of this limited warranty will be repaired exclusively at the buyer's expense. MUSIC Group or its authorized service center will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, MUSIC Group will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

10 Authorized BEHRINGER dealers do not sell new products directly in online auctions. Purchases made through an online auction are on a "buyer beware" basis. Online auction confirmations or sales receipts are not accepted for warranty verification and MUSIC Group will not repair or replace any product purchased through an online auction.

§ 5 Warranty transferability

This limited warranty is extended exclusively to the original buyer (customer of authorized retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of MUSIC Group.

§ 6 Claim for damage

Subject only to the operation of mandatory applicable local laws, MUSIC Group shall have no liability to the buyer under this warranty for any consequential or indirect loss or damage of any kind. In no event shall the liability of MUSIC Group under this limited warranty exceed the invoiced value of the product.

§ 7 Limitation of liability

This limited warranty is the complete and exclusive warranty between you and MUSIC Group. It supersedes all other written or oral communications related to this product. MUSIC Group provides no other warranties for this product.

§ 8 Other warranty rights and national law

1 This limited warranty does not exclude or limit the buyer's statutory rights as a consumer in any way.

2 The limited warranty regulations mentioned herein are applicable unless they constitute an infringement of applicable mandatory local laws.

3 This warranty does not detract from the seller's obligations in regard to any lack of conformity of the product and any hidden defect.

§ 9 Amendment

Warranty service conditions are subject to change without notice. For the latest warranty terms and conditions and additional information regarding MUSIC Group's limited warranty, please see complete details online at behringer.com.

* MUSIC Group Macao Commercial Offshore Limited of Rue de Pequim No. 202-A, Macau Finance Centre 9/J, Macau, including all MUSIC Group companies

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1. Introduction

Your ADA8000 is a state-of-the art 8-channel A/D and D/A converter. This ultra-compact 19" unit gives you the opportunity to connect analog audio signals directly to, say a multitrack recorder via the integrated ADAT interface. For this purpose, the ADA8000 deserves one rack space only. In return, you can even connect the digital signal of a multitracker via ADAT to the eight analog line outputs of your ADA8000. Signal conversion can be processed at 44.1 or 48 kHz with 24-bit resolution. The ADAT inputs and outputs can be operated independently as long as there is an identical wordclock signal. The integrated A/D and D/A converters ensure optimal signal conversion without any distortion or signal deterioration.

IMP "Invisible" Mic Preamp

The microphone channels are fitted with BEHRINGER's brand new high-end IMP INVISIBLE MIC PREAMPs that boast the following features:

130 dB dynamic range for an incredible amount of headroom,

- a bandwidth ranging from below 10 Hz to over 200 kHz for crystal-clear reproduction of even the finest nuances,
- the extremely low-noise and distortionless circuitry guarantees absolutely natural and transparent signal reproduction,
- they are perfectly matched to every conceivable microphone with up to 60 dB gain and +48 volt phantom power supply and
- they enable full utilisation of the greatly extended dynamic range of your 24-bit/192 kHz HD recorder, thereby maintaining optimal audio quality.

◊ **The following user's manual is intended to familiarize you with the unit's control elements, so that you can master all the functions. After having thoroughly read the user's manual, store it at a safe place for future reference.**

1.1 Before you get started

1.1.1 Shipment

The ADA8000 was carefully packed at the assembly plant to assure secure transport. Should the condition of the cardboard box suggest that damage may have taken place, please inspect the unit immediately and look for physical indications of damage.

◊ **Damaged units should NEVER be sent directly to us. Please inform the dealer from whom you acquired the unit immediately as well as the transportation company from which you took delivery of the unit. Otherwise, all claims for replacement/repair may be rendered invalid.**

1.1.2 Initial operation

Please make sure the unit is provided with sufficient ventilation, and never place the ADA8000 on top of an amplifier or in the vicinity of a heater to avoid the risk of overheating.

◊ **Before plugging the unit into a power socket, please make sure you have selected the correct voltage:**

The fuse compartment near the power plug socket contains three triangular markings. Two of these triangles are opposite one another. The voltage indicated adjacent to these markings is the voltage to which your unit has been set up, and can be altered by rotating the fuse compartment by 180°.

ATTENTION: This does not apply to export models that were for example manufactured only for use with 120 V!

◊ **If you alter the unit's voltage, you must change the fuses accordingly. The correct value of the fuses needed can be found in the chapter "Specifications".**

◊ **Faulty fuses must be replaced with fuses of appropriate rating without exception! The correct value of the fuses needed can be found in the chapter "Specifications".**

Power is delivered via the cable enclosed with the unit. All requiered safety precautions have been adhered to.

◊ **Please make sure that the unit is grounded at all times. For your own protection, you should never tamper with the grounding of the cable or the unit itself.**

1.1.3 Warranty

Please take a few minutes and send us the completely filled out warranty card within 14 days of the date of purchase. You may also register online at behringer.com. The serial number needed for the registration is located at the top of the unit. Failure to register your product may void future warranty claims.

2. Control Elements

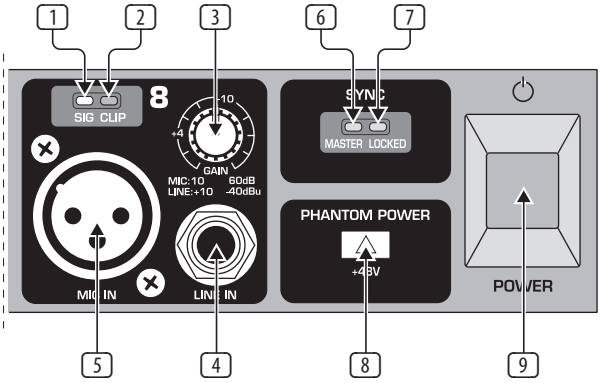

Fig. 2.1: ADA8000 channel section

The ADA8000 features eight identical channels. Each section comprises a microphone input (on a balanced XLR connector) and a line-level input (on a balanced ¼" TRS jack). We recommend connecting only one input signal per channel. When two input signals are connected, the weaker signal is suppressed and will be audible as interference noise.

[1] The **SIG LED** lights up when a signal is present at one of the inputs.

[2] If the input level is too high, the **CLIP LED** lights up. The CLIP LED should light up only with signal peaks but never all the time.

[3] Use the **GAIN** control to set the input gain. The gain ranges from +10 to +60 dB. The GAIN control governs both the LINE IN and the MIC IN input.

[4] This is the balanced ¼" TRS **LINE IN** connector. A connected analog LINE IN or MIC IN signal is not routed to the analog LINE OUT connector [16]. Instead, it will reach the ADAT OUT interface.

[5] This is the balanced **MIC IN** XLR connector. For example, you can connect your microphone here.

[6] As long as the ADA8000 functions as master, sending a clock signal, the **SYNC MASTER LED** lights up. The appropriate setting can be made on the rear (see [15]).

[7] When the ADA8000 is synchronized externally (either ADAT or wordclock IN), the **SYNC LOCKED-LED** lights up.

[8] Press the **+48 V** switch to provide condenser microphones which are connected to the MIC IN inputs with the required phantom power. Dynamic microphones do not require this external power supply. When the switch is depressed, phantom power is active on all inputs.

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◊ **Please mute your amplifier(s) before activating the phantom power. Otherwise, switch-on thumps may be audible on your loudspeakers/headphones.**

9 The **POWER** switch powers the ADA8000 on. You should always make sure that the POWER switch is in the "Off" position when initially connecting the unit to the mains.

◊ **Please take note: Merely switching the unit off does not mean that it is fully disconnected from the mains. When not using the unit for prolonged periods of time, please unplug the unit's power cord from the power outlet.**

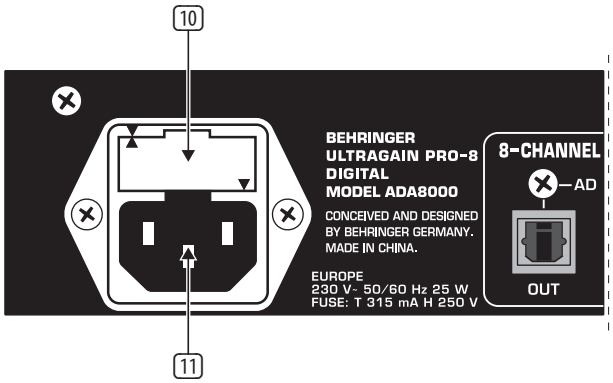

Fig. 2.2: Mains supply and fuse compartment

10 **FUSE COMPARTMENT / VOLTAGE SELECTION**. Before connecting the unit to a power outlet, please make sure that the selected voltage matches your local voltage. When replacing fuses, please make sure that you always use fuses of the same type. Some units allow for switching between 230 V und 120 V. Please note: when connecting a unit intended for the European market to a 120 V power outlet, you must also replace the factory fuse with a higher-value fuse.

11 Power is supplied via an **IEC** connector. The matching cable is provided with the unit.

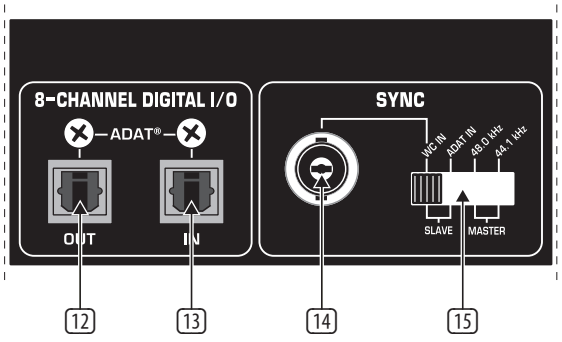

Fig. 2.3: ADAT IN/OUT and wordclock SYNC

12 All analog input signals are converted into the standard ADAT format and can be taken at the **8-CHANNEL DIGITAL OUT**. This output can be used to feed an ADAT recorder or any other device featuring an ADAT input. Please note that a signal present at the Digital In will not be routed to the Digital Out.

13 At the **8-CHANNEL DIGITAL IN**, you can connect an ADAT device. The signal will automatically be routed to the 8 analog LINE OUT connectors.

14 Use the **WC IN** connector to connect devices for the exter-nal synchronization of your ADA8000. This BNC connector is only active, when the respective setting on the rear is made (see 15). When, for example, various devices are interconnected in a digital recording system with, say, a digital mixing console, all digital units connected have to be synchronized via a shared wordclock signal.

15 The setting of this switch depends on the application of your ADA8000. If an external ADAT recorder is supposed to send the wordclock signal (in this case, the ADA8000 functions as SLAVE), the switch has to be set to the ADAT IN position. Please also note the instructions given in the user's manual of your ADAT device. When your ADA8000 functions as Master (here, the ADA8000 sends the wordclock signal) please use the switch to select the sampling rate of your choice (either 44,1 or 48 kHz).

16 Your ADA8000 features eight **LINE OUT**s on balanced XLR connectors. An input signal present at the ADAT IN will automatically be transferred into eight independent signals and routed to the eight analog LINE OUT connectors.

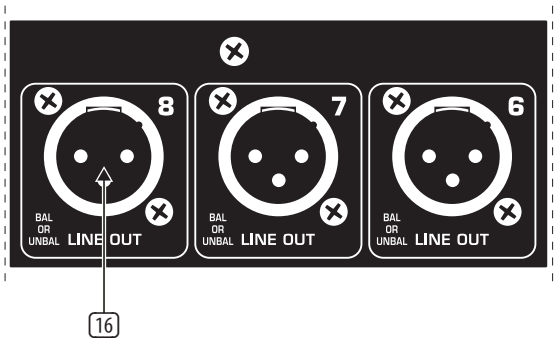

Fig. 2.4: LINE OUT connectors

3. Applications

Your ADA8000 is an ideal expansion for BEHRINGER's digital mixing console DDX3216, which features an optional ADAT interface. Thanks to the ADA8000, this digital mixer can be expanded by eight additional analog inputs and outputs. Sound cards featuring ADAT INs and OUTs receive eight first-class analog inputs and outputs with the ADA8000. What's more, the eight "Invisible" Mic Preamps perfectly enable direct recording to digital multitrackers (e.g. ADAT). Last but not least, you can also use the ADA8000's audio channels to create a live surround mix.

4. Audio Connections

You will need many different cables for the various applications. The following illustrations show how these cables should be laid out.

Please use exclusively high-grade cabels. The audio connectors of your ADA8000 are electronically balanced and ensure automatic hum and noise reduction.

Needless to say, even devices with unbalanced outputs can be connected to the balanced in/outputs of your ADA8000. For this purpose, please use either mono plugs or connect the ring of stereo plugs with the sleeve (when using XLR connectors, pin 1 and pin 3 have to be bridged).

◊ **Please ensure that only qualified personnel install and operate the ADA8000. During installation and operation the user must have sufficient electrical contact to earth. Electrostatic charges might affect the operation of the unit.**

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Balanced use with XLR connectors

input

1 = ground/shield
2 = hot (+ve)
3 = cold (-ve)

output

For unbalanced use, pin 1 and pin 3 have to be bridged

Fig. 4.1: XLR connectors

Unbalanced ¼" TS connector

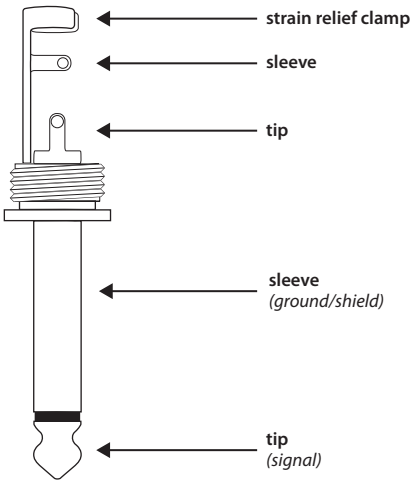
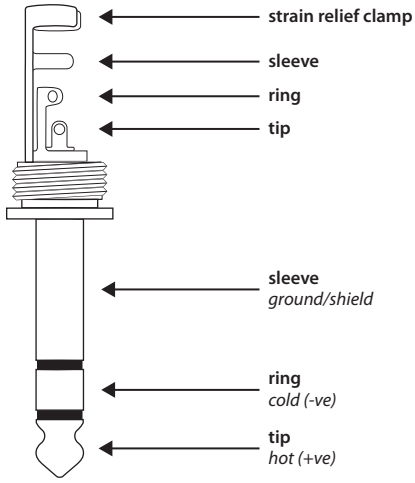


Fig. 4.2: ¼" TS connector

Balanced ¼" TRS connector



For connection of balanced and unbalanced plugs, ring and sleeve have to be bridged at the stereo plug.

Fig. 4.3: ¼" TRS connector

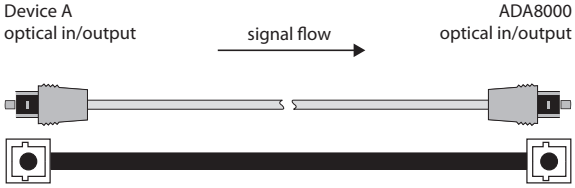


Fig. 4.4: Connecting the ADA8000 optically via Toslink

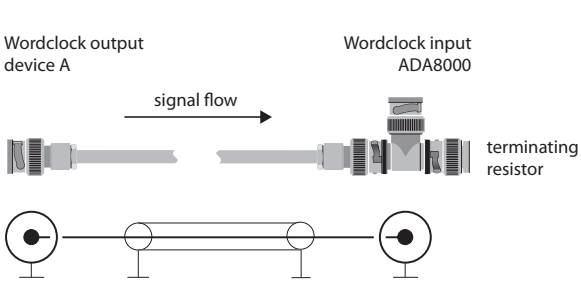


Fig. 4.5: Unbalanced connection (termination) of the ADA8000's wordclock input

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5. Specifications

Microphone Inputs	
Type	Electronically balanced, discrete input circuitry
Gain range	+10 to +60 dB
Max. input level	+6 dBu @ +10 dB gain for 0 dBFS
Impedance	approx. 2 kΩ balanced
Phantom power	+48 V, switchable

Line Inputs	
Type	¼" TRS connector, electronically balanced, discrete input circuitry
Impedance	approx. 20 kΩ balanced, approx. 10 kΩ unbalanced
Gain range	-10 to +40 dB
Max. input level	+26 dBu @ -10 dB gain for 0 dBFS

Line Outputs	
Type	XLR, electronically balanced
Impedance	approx. 500 Ω balanced, approx. 250 Ω unbalanced
Max. output level	+16 dBu @ 0 DBFS

Digital Input	
Type	TOSLINK, optical connector
Format	ADAT, 8 channels, 24-bit @ 44,1/48 kHz

Digital Output	
Type	TOSLINK, optical connector
Format	ADAT, 8 channels, 24-bit @ 44,1/48 kHz

A/D Converter	
Type	24-bit, 64-times oversampling, delta-sigma
Dynamic range	Analog input to digital output, approx. 103 dB

D/A Converter	
Type	24-bit, 128-times oversampling, delta-sigma
Dynamic range	Digital input to analog output, approx. 100 dB

Synchronization	
Source	Internal 44.1 kHz, internal 48 kHz, ADAT input, wordclock input

Wordclock Input	
Type	BNC, 1 x sample rate
Input level	2 to 6 V peak-to-peak
Frequency range	44.1 to 48 kHz

System Specifications	
Frequency range	10 Hz to 21 kHz @ 48 kHz sample rate
THD	<0,01%
Crosstalk	<-86 dB

Power Supply	
Mains voltage	
USA / Canada	120 V~, 60 Hz
Europe / U.K. / Australia	230 V~, 50 Hz
Japan	100 V~, 50 - 60 Hz
General export model	120/230 V~, 50 - 60 Hz
Power consumption	25 W
Fuse	100 - 120 V ~: T 630 mA H 200 - 240 V ~: T 315 mA H
Mains connection	Standard IEC receptacle

Dimensions	
(H x B x T)	ca. 1 ¾ x 19 x 8 ½" ca. 44.5 x 482.6 x 217 mm
WEIGHT	approx. 2.3 kg
SHIPPING WEIGHT	approx. 3.3 kg

BEHRINGER constantly strives to maintain the highest quality standards. Modifications may be made, if necessary, without prior notice. The specifications and appearance of the equipment may therefore differ from those listed or illustrated.

FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION

BEHRINGER

ULTRAGAIN PRO-8 DIGITAL ADA8000

Responsible party name:	**MUSIC Group Services US Inc.**
Address:	**18912 North Creek Parkway, Suite 200 Bothell, WA 98011, USA**
Phone/Fax No.:	**Phone: +1 425 672 0816 Fax: +1 425 673 7647**

ULTRAGAIN PRO-8 DIGITAL ADA8000

complies with the FCC rules as mentioned in the following paragraph:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Important information:

Changes or modifications to the equipment not expressly approved by MUSIC Group can void the user's authority to use the equipment.

We Hear You

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